S. HRG. 102-172

WILLIAM HAPPER NOMINATION

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

ON THE

NOMINATION OF WILLIAM HAPPER, TO BE DIRECTOR OF THE OFFICE OF ENERGY RESEARCH, DEPARTMENT OF ENERGY

JULY 18, 1991

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Committee on Energy and Natural Resources

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WILLIAM HAPPER NOMINATION

THURSDAY, JULY 18, 1991

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 9:35 a.m., in room SD-317, Dirksen Senate Office Building, Hon. Bill Bradley, presiding.

OPENING STATEMENT OF HON. BILL BRADLEY, U.S. SENATOR FROM NEW JERSEY

Senator BRADLEY. The committee will come to order.

The committee today will welcome President Bush's nominee, Dr. William Happer, as Director of the Office of Energy Research, U.S. Department of Energy.

Secretary of Energy Watkins on July 15 established the Science and Technology Advisor to the Secretary. The Secretary also realigned related functions within DOE. This Secretarial action means that the Director of Energy Research will serve as the Science and Technology Advisor to the Secretary. The Director will be responsible for scientific and technical advice for DOE research and development activities. This may include advice on the following topics:

External scientific and technical developments relevant to the missions and activities of DOE.

Opportunities to exploit the application of DOE-developed science and technology within the DOE infrastructure.

Productive areas for cooperation among the science and technology programs funded by individual elements of DOE.

The balance and effectiveness of DOE support and utilization of researchers in universities, industry, and the DOE laboratories.

And finally, ways to improve and maintain productive relationships among DOE laboratories, universities, and industry.

Thus, if confirmed, Dr. Happer will have a challenging assignment, very broad and very important. Without objection the Committee questionnaire and financial disclosure statement furnished by Dr. Happer will be submitted for the record.

Let me say that I am very pleased to have the honor of presiding over this particular meeting, because Dr. Happer is someone who I think is an extraordinary talent and that the administration is lucky to have him in its service. He has agreed to resign as the distinguished professor of physics at Princeton University to take on the position of Director of Energy Research, Department of Energy, and Princeton's loss will be our collective gain, I think.

Dr. Happer was educated at the University of North Carolina and at Princeton, and has taught at Princeton since 1980. He has conducted both experimental and theoretical research in physics and has worked with Government and industry, and he has published widely. He has management experience, having been a director of Columbia Radiation Laboratory. And most important, I think that he is a committed person and his commitment to public values is recognized by his willingness to serve in this administration in this capacity.

So Dr. Happer, welcome to the committee and if you have any comment or a statement, the floor is yours now. Before you begin maybe I could have you give the oath. Mr. Happer, the rules of the committee which apply to all nominees require that they be sworn in connection with their testimony. Would you please rise and raise your right hand?

[Whereupon, Dr. William Happer was duly sworn by Senator Bradley.]

Senator BRADLEY. You may be seated. Before you begin your statement, I would like to ask you three questions addressed to each nominee that comes before the committee. Will you be available to appear before this committee and other congressional committees to represent the Department positions and respond to issues of concern to Congress?

Dr. HAPPER. I will.

Senator BRADLEY. Are you aware of any personal holdings, investments, or interests that could constitute a conflict of interest or create the appearance of such conflicts should you be confirmed and assume the office to which you have been nominated by the President?

Dr. HAPPER. My investments, personal holdings, and other interests have been reviewed both by myself and by the appropriate ethics counselors within the Department of Energy and the Federal Government. I have taken appropriate action to avoid any conflicts of interests. There are no conflicts of interest or appearances thereof to my knowledge.

Senator BRADLEY. Are you involved or do you have any assets held in blind trusts?

Dr. HAPPER. No.

Senator BRADLEY. I would like to, prior to your beginning with your testimony, submit for the record the statement of Senator Malcolm Wallop, who is the ranking member of the committee.

[The prepared statement of Senator Wallop follows:]

PREPARED STATEMENT OF HON. MALCOLM WALLOP, U.S. SENATOR FROM WYOMING

Good Morning. I would like to begin by welcoming to the Committee today Dr. William Happer, who has been nominated to be Director of the Office of Energy Research for the Department of Energy.

Dr. Happer is an exceptionally well-qualified candidate for this position. Since 1980, he has served as Professor of Physics at Princeton University where he earned his doctorate. Prior to 1980, he was Professor of Physics at Columbia University. He is the recipient of numerous honors and awards in his field and has authored over 100 publications. Dr. Happer has acted as a scientific consultant to Los Alamos, Lawrence Livermore and Argonne National Laboratories.

I believe Dr. Happer is very well-qualified for this position, and support his nomination.

Senator BRADLEY. You may begin, Dr. Happer.

STATEMENT OF DR. WILLIAM HAPPER, JR., NOMINEE TO BE DIRECTOR, OFFICE OF ENERGY RESEARCH, DEPARTMENT OF ENERGY

Dr. HAPPER. Mr. Chairman, thank you and distinguished members of the committee, and thank you, too, I am honored to appear before you as President Bush's nominee to be Director of the Office of Energy Research in the Department of Energy.

There are three main responsibilities of this office. The first is to serve as science and technology advisor for the Secretary of Energy. Second is to oversee the administration of the Department's laboratories except for the nuclear weapons' laboratories, and to facilitate technology transfer from the laboratories to industry. Finally, the office is responsible for the management of research and development activities funded through the Office of Energy Research.

The principal programs managed through the Office of Energy Research include high-energy physics, nuclear physics, basic energy sciences, fusion energy, health and environmental research, technology transfer, university and scientific education, and the superconducting supercollider.

These programs involved many talented scientists in the national laboratories, industry, and universities. One of my goals would be to strengthen the ties between and the interactions between the laboratories, industries, and the universities.

I would also work toward strengthening ties to the private sector to ensure effective technology transfer. I am convinced that some of the programs supported today in the Department of Energy will help to provide abundant and environmentally safe energy in the future.

The Department of Energy has always been a strong supporter of scientific education. I plan to strengthen this educational role, since science and technological capabilities are of increasing national importance.

My formal training includes a B.S. degree in physics from the University of North Carolina in 1960, a Ph.D in physics from Princeton in 1964. I have served on the faculties of Columbia University and Princeton University, where I taught and carried out experimental and theoretical research in atomic, molecular, and optical physics. I have done extensive consulting in Government and industry. And my experience in scientific management includes terms as director of the Columbia Radiation Laboratory from 1974 to 1978 and chairman of JASON, a consulting group of academic scientists from 1986 to 1990.

As Director of Energy Research, if confirmed, I would dedicate myself to attaining the national goals of the Department of Energy. I look forward to the challenges of this important responsibility, and I would plan to work closely with the Congress to accomplish my duties.

And if I may, Mr. Chairman, I would like to introduce my wife, Barbara, who has kindly come to give me moral support.

Senator BRADLEY. Well, Dr. Happer, I want to congratulate you on your sensitivity.

[Laughter.]

Senator BRADLEY. And the committee welcomes Mrs. Happer to its deliberations on the nomination of your husband. It is a pleasure to have you here.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. I would simply join with you in welcoming Dr. and Mrs. Happer and we look forward, obviously, to your contribution in your position and expect great things from you.

Thank you, Mr. Chairman.

Senator BRADLEY. Dr. Happer, you covered some things in your statement, but I was just curious, what are the three things that you most like to accomplish in your first year or two in the office? You mentioned scientific education. Do you have any other specific things that you would like to try to accomplish, given this new role?

Dr. HAPPER. Well, Senator, one of my problems will be to try to live within the budget caps in a way that most effectively uses the resources at my disposal, so I am very concerned about that and I am working very hard to see that I do that properly.

Another thing I would like to do is to make our universities and national laboratories much more helpful to national competitiveness. With the aid of the Secretary, I would like to make it more easy to get the results of research in these institutions out into the private sector.

Senator BRADLEY. Well, I think both of those are important things to do. I am reminded how frequently our competitors are able to proliferate scientific information and move it into the commercial application at a much faster rate, and I think that your interest in seeing the information disseminated will be of great importance.

So we will look forward to following up with you in the course of the year in order to see the progress of your interest.

Let me say that any Senator who desires to submit questions for the record will have the opportunity to do so until 5 p.m. today.

Dr. Happer, I think that this is, we have had a good conversation in my office and I know you visited other Senators, and I see no further need for questions. I think that this is a very good appointment, very good nomination, and I am sure that you will have no trouble being confirmed. And I want to tell you once again how much I admire your record and your willingness to serve.

Dr. HAPPER. Thank you, sir.

Senator BRADLEY. Senator Murkowski, any other comments?

Senator MURKOWSKI. Mr. Chairman, I have no questions. I, of course, was not here for the statement of Dr. Happer, but being somewhat familiar with his background and capabilities, I think he is an extraordinary find, and we look forward again to the contribution that you will make in your new capacity.

Thank you, Mr. Chairman.

Senator BRADLEY. Dr. Happer, before I bring the gavel down, let me just share with you a bit of wisdom in the Senate, and that is the shorter the hearing, the more important the expectation.

The committee will be adjourned.
[Whereupon, at 9:50, a.m., the hearing was adjourned.]
[The following letter was submitted for the record:]

FUSION POWER ASSOCIATES,
Gaithersburg, MD, July 9, 1991.

Hon. J. BENNETT JOHNSTON,
Chairman, Senate Committee on Energy and Natural Resources, Washington, DC.

DEAR SENATOR JOHNSTON: I am writing to express the full and enthusiastic support of the Corporate members and affiliates of Fusion Power Associates for the nomination of Prof. William Happer, Jr. to become DOE Director of Energy Research. A list of our sponsors is enclosed.

Prof. Happer is a distinguished and objective scientist who is respected and trusted by the scientific community. The federal government is lucky to attract a man of his caliber into this position. As you know the position has been vacant for some time. It is essential for the Senate to act expeditiously so that Prof. Happer can play a role in the preparation of the FY 1993 budget and in other important energy matters.

I would be happy to testify personally at Prof. Happer's confirmation hearings, if you would find this to be helpful. If I can be of any assistance to you on this or other matters, please be assured of my interest and support.

Sincerely yours,

STEPHEN O. DEAN,
President.

APPENDIXES

APPENDIX I

Informational Statement of Dr. Happer

UNITED STATES SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES

STATEMENT FOR COMPLETION BY PRESIDENTIAL NOMINEES

Name: Happer (LAST) William (FIRST) (OTHER)

Position to which nominated: Director of Energy Research Date of nomination: May 20, 1991

Date of birth: 27 (DAY) 7 (MONTH) 1939 (YEAR) Place of birth: Vellore, India

Marital status: Married Full name of spouse: Barbara Jean Happer

Name and ages of children: James, 22; Gladys, 19

Education:

Institution	Dates attended	Degrees received	Dates of degrees
University of North Carolina	1956-1960	BS in Physics	1960
Princeton University	1960-1964	PhD in Physics	1964

Employment record: List below all positions held since college, including the title and description of job, name of employer, location, and dates.

Research Physicist, Instructor, Assistant Professor, Associate Professor, Professor, all in Physics, Columbia University, 1964 - 1980

Professor of Physics, Princeton University, 1980 - Present

Member of JASON, 1975 - Present
Chairman of JASON, 1987 - 1990

Trustee of the MITRE Corporation, 1988 - Present

1

Employment record—Continued

Scientific consulting for various organizations
(please see attached list)

Military service: Describe any military service not listed above, including dates, rank, and type of discharge.

None

Honors and awards: List below all scholarships, fellowships, honorary degrees, military medals, honorary society memberships, and any other special recognitions for outstanding service or achievement.

National Merit Scholarship, 1956 - 1960

Morehead Scholarship, 1956 - 1960

Woodrow Wilson Fellow, 1960 - 1964

National Science Foundation Fellowship, 1960 - 1962

Fellow, American Physical Society
Fellow, American Association for the Advancement of Science
Alexander von Humboldt Award, 1976
Class of 1909 Professor of Physics at Princeton, 1988 - Presen

Memberships: List below all memberships and offices held in professional, fraternal, business, scholarly, civic, charitable and other organizations.

Organization	Dates	Office held (if any)
American Physical Society	1964 - Present	
American Association for the Advancement of Science,	1964 - Present	
American Association of University Professors,	1964 - Present	

Published writings: List the titles, publishers and dates of any books, articles, or reports you have written.

Over 100 publications (see attached bibliography)

Future employment relationships:

1. Will you sever all connections with your present employer, business firm, association or organization if you are confirmed by the Senate?

Yes

2. Do you have any plans after completing government service to resume employment, affiliation or practice with your current or any previous employer, business firm, association or organization?

No

3. Has a commitment for employment after you leave government been made to you by anyone? Have you made any such commitment?

No

4. (a) if you have been appointed for a fixed term, do you expect to serve the full term?

Not applicable

Future employment relationships—Continued

(b) If you have been appointed for an indefinite term, are there any known limitations on your willingness or ability to serve for the foreseeable future?

No

Financial statement:

1. Attach a copy of your Executive Personnel Financial Disclosure Report (SF 278).

2. List sources, amounts and dates of all anticipated receipts from deferred income arrangements, stock options, uncompleted contracts and other future benefits which you expect to derive from previous business relationships, professional services and firm memberships or from former employers, clients, and customers. Amounts should be indicated by the categories established for reporting income on Form SF 278, Schedule A.

None

3. Are you currently a party to any legal action? If so, describe its nature and status.

No

4. Have you ever declared bankruptcy? If so, describe the circumstances.

No

5. Have you filed a Federal income tax return for each of the last 10 years? If not, please explain.

Yes

6. Has the Internal Revenue Service ever audited your Federal tax return? If so, what resulted from the audit?

Yes, about 1970, no change in my return resulted.

Potential conflicts of interest:

1. List any investments, obligations, liabilities, or other relationships which might involve potential conflicts of interest with the position to which you have been nominated.

None

2. Describe any business relationship, dealing or financial transaction (other than taxpaying) that you have had during the last 10 years with the Federal Government, whether for yourself or relatives, on behalf of a client, or acting as an agent, which might in any way constitute or result in a possible conflict of interest with the position to which you have been nominated.

None

3. Describe any lobbying activity which you have performed during the past 10 years with respect to legislative or administrative actions at the Federal, State or local level.

None

4. Have you been informed of the conflict of interest laws and regulations applicable to the position to which you have been nominated?

Yes

Potential conflicts of interest—Continued

5. Explain how you will resolve any potential conflict of interest that may be disclosed by your responses to this form and the attachments thereto. Attach a statement of the appropriate agency ethics official explaining the applicable laws or regulations, any potential conflicts, and the action required to resolve such conflicts.

I will execute all agreements described in the attached statement of the Department of Energy's Agency Ethics Official, including resignation from my position with Princeton University.

6. Explain how you will resolve any potential conflicts of interest that may arise in the future if you are confirmed for the position for which you have been nominated.

Should any questions arise about possible conflicts of interest I would consult with the Department's Ethics Official and follow his advice to ensure that there is no possible conflict or appearance of conflict.

Public disclosure: Do you have any objections to this form and the attachments thereto being made public?

No

AFFIDAVIT

DISTRICT OF COLUMBIA) ss

I, William Happer, being duly sworn, hereby state that I have read the foregoing Statement for Completion by Presidential Nominees, including all attachments thereto, and that the information provided therein is, to the best of my knowledge and belief, current, accurate, and complete.

William Happer
(Signature of Nominee)

Subscribed and sworn to before me this 24th day of June, 1991

Notary Public

My Commission Expires November 14, 1994

Form approved by the Committee February 5, 1985.

U.S. GOVERNMENT PRINTING OFFICE: 1987—67-074

ORGANIZATION	APPROXIMATE YEARS OF ASSOCIATION	APPROXIMATE DAYS PER YEAR WORKED
Schlumberger	1989-1990	2
Johns Hopkins Applied Physics Lab	1977-1978	2
NASA	1970	2
RCA Space Division	1982	2
Los Alamos Nat'l Lab	1985-present	4
Lawrence Livermore	1985-present	2
Nat'l Lab Aquirre Internat'l	1987-present	2
Bendix	1971	2
Army Basic Science	1986	2
Advisory Board Singer Kearfott	1970-1980	1
Littion Industries	1978-1982	1
Naval Air Development Center	1972-1982	1
Argonne Nat'l Lab	1982-1983	2
Air Force Science Advisory Board	1984-1988	4
James D. Wulfensohn	1986	1
Scientific Advisory Board of Strategic Defense Initiative	1987-1990	10
R&D Associates	1987-present	2
Smith-Barney	1989	3
Swarthmore College	1989	1

Department of Energy
Washington, DC 20585

MAY 24 [illegible]

Mr. Stephen D. Potts
Director
Office of Government Ethics
1201 New York Ave., N.W., Suite 500
Washington, D.C. 20005-3917

Dear Mr. Potts:

This letter transmits to you, in accordance with 5 C.F.R. 2634.604(c)(2)(iii), a copy of the Standard Form 278, "Executive Branch Public Financial Disclosure Report," filed by William Happer incident to his nomination to the position of Director of Energy Research, U.S. Department of Energy. A position description is attached to the form.

I have also enclosed a copy of the statement provided to Dr. Happer, advising him of statutory and other restrictions applicable to his anticipated service as the Director. This advice is based upon a review of the interests disclosed in his Standard Form 278. I encountered no problems in reaching the conclusions upon which my certification on the form is based.

Sincerely,

Ralph D. Goldenberg
Assistant General Counsel
for General Law

Enclosures

DOE F 1325.8
(5-81)

United States Government Department of Energy

memorandum

DATE: MAY 24 1991

REPLY TO
ATTN OF: GC-43

SUBJECT: Statement of Agency Ethics Official for Senate Committee

TO: William Happer

This memorandum is intended to serve as a statement from the designated agency ethics official for this Department, as required by the Statement for Completion by Presidential Nominees that you are submitting to the United States Senate Committee on Energy and Natural Resources in connection with your nomination to the position of Director of Energy Research. I have reviewed your Standard Form 278 (Executive Branch Public Financial Disclosure Report) dated March 12, 1991, and have certified that the information contained therein discloses no conflict of interest under applicable laws and regulations.

As a supervisory employee, you will be prohibited by section 602(a) of the Department of Energy (DOE) Organization Act (Pub. L. No. 95-91) from knowingly receiving compensation from, holding any official relation with, or having any pecuniary interest in any energy concern. The term "energy concern" is defined in section 601(b) of the Act as any entity "significantly engaged in the business" of any of a variety of activities related to energy production, distribution, sale, or research and development, or any entity significantly engaged in such research and development pursuant to a DOE-funded program irrespective of whether it otherwise engages in such business. The term also includes any entity holding an interest in property from which an energy resource is commercially produced or obtained.

On Schedule A of your SF 278, you have reported that you hold common stock in Atlantic Richfield Co., Champion International Corp., Dow Chemical Co., Duke Power Co., Exxon Corp., General Electric Co., W.R. Grace & Co., Kansas Gas & Electric Co., Public Service Enterprise Group Inc., Scott Paper Co., Sun Energy Partners, L.P., Waste Management, Inc., and Wheelabrator Technologies Inc. Each of these entities has

been determined to be an energy concern within the meaning of section 602(a). Therefore you are required to divest of these interests. You have agreed to divest these interests upon your appointment as Director.[1]

You have also disclosed that you are currently a tenured professor at Princeton University. Princeton University is an energy concern within the meaning of section 601(b) of the Act. Therefore, as a supervisory employee of the Department, the divestiture requirement of section 602(a) of the Act would prohibit you from receiving compensation from, or holding an official relation with, the university. You have agreed that, upon your appointment as Director, you will resign from your tenured position and sever your relationship with Princeton University.

Section 208, title 18, United States Code, prohibits a Federal officer or employee from participating personally and substantially, as a Government employee, in any particular matter in which, to his knowledge, he has, or his spouse, minor child, general partner, organization in which he is serving as officer, director, trustee, partner, or employee,

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[1] Section 502 of the Ethics Reform Act of 1989 (Pub.L. No. 101-194), which amended section 1043 of the Internal Revenue Code, provides that employees who are required to divest of financial interests due to conflict-of-interest rules may be eligible for special tax treatment of capital gains arising from the transaction. Section 502 provides:

> If an eligible person sells any property pursuant to a certificate of divestiture, at the election of the taxpayer, gain from such sale shall be recognized only to the extent that the amount realized on such sale exceeds the cost. . . of any permitted property purchased by the taxpayer during the 60-day period beginning on the date of such sale.

Non-recognition of capital gains is available only to those individuals who have received a certificate of divestiture issued by the Office of Government Ethics. You have agreed to divest your interests in Atlantic Richfield Co., Duke Power Co., General Electric Co., W.R. Grace & Co., Kansas Gas & Electric Co., and Scott Paper Co. upon receipt of a certificate of divesture from the Office of Government Ethics (OGE). In the event that OGE declines to issue the certificate, you have agreed to divest of these interests immediately upon receipt of the declination.

or any person or organization with whom he is negotiating or has any arrangement concerning prospective employment has, a financial interest.

You have reported on Schedule A of your Standard Form 278, that you hold common stock in General Motors Corp., International Business Machines Corp., Minnesota Mining & Manufacturing Co., and Union Carbide Corp. These interests constitute financial interests within the meaning of 18 U.S.C. 208. Accordingly, you should avoid participation in any matter the outcome of which could have a direct and predictable effect upon these entities or any other financial interest.[2]

In addition, the participation restrictions of section 606 of the DOE Organization Act may apply to you. Although this provision is suspended at this time, the suspension expires on May 31, 1991.[3] Section 606(a) of the Act prohibits a supervisory employee, for a period of one year after terminating any employment with any energy concern, from knowingly participating in any Department proceeding[4] in which his former employer is substantially, directly, or materially involved, other than in a rulemaking proceeding which has a substantial effect on numerous energy concerns. Further, section 606(b) of the Act prohibits a supervisory employee, for a period of one year after commencing service in the Department, from knowingly participating in any Department

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[2] You should avoid participation in any matters affecting Atlantic Richfield Co., Champion International Corp., Dow Chemical Co., Duke Power Co., Exxon Corp., General Electric Co., W.R. Grace & Co., Kansas Gas & Electric Co., Public Service Enterprise Group Inc., Scott Paper Co., Sun Energy Partners, L.P., Waste Management, Inc., and Wheelabrator Technologies Inc. until you have divested of these interests.

[3] Section 606 was originally suspended until November 30, 1990, by section 507 of the Ethics Reform Act of 1989 (Pub. L. No. 101-194). The suspension was extended to May 31, 1991, by section 815 of the National Defense Authorization Act for Fiscal Year 1991 (Pub. L. No. 101-510).

[4] The term "Department proceeding" is defined in section 1010. 103(h) of title 10, Code of Federal Regulations, as "any judicial proceeding, Department hearing, application, rulemaking, order, license, contract, grant, award, fund transfer, claim, controversy, charge, accusation, or arrest, in which the Department is directly involved."

proceeding for which, within the previous five years, he had direct responsibility, or in which he participated personally and substantially, while in the employment of any energy concern.

In addition to your employment at Princeton University, you have reported that you provided consulting services to the University of California from June, 1986 to the present, and Schlumberger-Doll Research Laboratories from January, 1990 to the present. Princeton University, the University of California, and Schlumberger-Doll Research Laboratories have been determined to be energy concerns within the meaning of section 601(b) of the DOE Act. Therefore, in accordance with section 606(a), you should avoid participation, for a period of one year from the termination of your employment with each of these entities, in any Department proceeding in which such entity is substantially, directly, or materially involved, other than a rulemaking proceeding that has a substantial effect on numerous energy concerns. This restriction would apply to you only if section 606 is reinstated after May 31.[5]

You should also be aware that Executive Order 12674, as amended by Executive Order 12731, prohibits employees appointed by the President to positions in the executive branch from receiving outside earned income during the term of the Presidential appointment. You have advised that you will resign from your positions with the following organizations: Aguirre International and Los Alamos National Laboratory (consulting services to the University of California); The Mitre Corporation; Princeton University; and Schlumberger-Doll Research Laboratories. Upon appointment, please provide this office with documentation of your resignations from these organizations.

Please let me know if I can be of further assistance.

Ralph D. Goldenberg
Assistant General Counsel
for General Law

---

[5] Pursuant to section 606(c) the Secretary may waive the participation restrictions of sections 606(a) and (b) after making a finding that application of the restrictions in a particular circumstance would work an exceptional hardship upon a specific supervisory employee or would be contrary to the national interest. The possibility of issuing such a waiver will be explored if section 606 is no longer suspended.

5 CFR Part 2634
U.S. Office of Government Ethics

Executive Branch Public Financial Disclosure Report

Reporting Status (Check Appropriate Boxes)	☐ Incumbent	Calendar Year Covered by Report	☒ New Entrant, Nominee, or Candidate	Date of Appointment, Candidacy, Election, or Nomination (Month, Day, Year)	☐ Termination Filer	Termination Date (If Applicable) (Month, Day, Year)	Agency Use Only

Reporting Individual's Name	Last Name	First Name and Middle Initial	OGE Use Only
	HAPPER	WILLIAM (NMI)	

Position for Which Filing	Title of Position	Department or Agency (If Applicable)
	DIRECTOR OF ENERGY RESEARCH	DEPARTMENT OF ENERGY

Location of Present Office (or forwarding address)	Address (Number, Street, City, State, and ZIP Code)	Telephone No. (Include Area Code)
	PHYSICS DEPARTMENT, PRINCETON UNIVERSITY PRINCETON, NJ 08544	(609) 258-5584

Position(s) Held with the Federal Government During the Preceding 12 Months (If Not Same as Above)	Title of Position(s) and Date(s) Held
	NONE

Presidential Nominees Subject to Senate Confirmation	Name of Congressional Committee Considering Nomination	Do You Intend to Create a Qualified Diversified Trust?
	ENERGY	☐ Yes ☒ No

Certification	Signature of Reporting Individual	Date (Month, Day, Year)
I CERTIFY that the statements I have made on this form and all attached schedules are true, complete and correct to the best of my knowledge and belief.	William Happer	March 12, 1991

Other Review (If desired by agency)	Signature of Other Reviewer	Date (Month, Day, Year)

Agency Ethics Official's Opinion	Signature of Designated Agency Ethics Official/Reviewing Official	Date (Month, Day, Year)
The information contained in this report discloses no conflict of interest under applicable laws and regulations.	Eugene B. Greenberg	5/24/91

Office of Government Ethics Use Only	Signature	Date (Month, Day, Year)

Comments of Reviewing Officials (If additional space is required, use the reverse side of this sheet)

(Check box if comments are continued on the reverse side) ☐

Fee for Late Filing

Any individual who is required to file this report and does so more than 30 days after the date the report is required to be filed, or, if an extension is granted, more than 30 days after the last day of the filing extension period shall be subject to a $200 fee.

Reporting Periods

Incumbents: The reporting period is the preceding calendar year except Part II of Schedule C and Part I of Schedule D where you must also include the filing year up to the date you file. Part II of Schedule D is not applicable.

Termination Filers: The reporting period begins at the end of the period covered by your previous filing and ends at the date of termination. Part II of Schedule D is not applicable.

Nominees, New Entrants and Candidates for President and Vice President:

Schedule A--The reporting period for income (BLOCK C) is the preceding calendar year and the current calendar year up to the date of filing. Value assets as of any date you choose that is within 31 days of the date of filing.

Schedule B--Not applicable.

Schedule C, Part I (Liabilities)--The reporting period is the preceding calendar year and the current calendar year up to any date you choose that is within 31 days of the date of filing.

Schedule C, Part II (Agreements or Arrangements)--Show any agreements or arrangements as of the date of filing.

Schedule D--The reporting period is the preceding two calendar years and the current calendar year up to the date of filing.

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		2

| Assets and Income (BLOCK A) | | | Valuation of Assets at close of reporting period (BLOCK B) | | | | | | | | Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C) | | | | | | | |

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		3

| Assets and Income (BLOCK A) | | | Valuation of Assets at close of reporting period (BLOCK B) | | | | | | | | Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C) | | | | | | | |

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		4

| Assets and Income (BLOCK A) | Valuation of Assets at close of reporting period (BLOCK B) | | | | | | | | Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C) | | | | | | | |

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		5

| Assets and Income (BLOCK A) | Valuation of Assets at close of reporting period (BLOCK B) | | | | | | | | Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C) | | | | | | | |

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		6

| Assets and Income (BLOCK A) | Valuation of Assets at close of reporting period (BLOCK B) | | | | | | | | Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C) | | | | | | | |

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		7

Assets and Income (BLOCK A)	Valuation of Assets at close of reporting period (BLOCK B)								Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C)																				
									Type									Amount												
Identify each asset held for the production of income which had a fair market value exceeding $1,000 at the close of the reporting period. Identify each asset or source of income which generated over $200 in income during the reporting period. None ☐	None (or less than $1,001)	$1,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $250,000	$250,001 - $500,000	$500,001 - $1,000,000	Over $1,000,000	Dividends	Rent and Royalties	Interest	Capital Gains	Exempted Investment Fund	Exempted Trust	Qualified Trust	Other (Specify Type)	None (or less than $201)	$201 - $1,000	$1,001 - $2,500	$2,501 - $5,000	$5,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $1,000,000	Over $1,000,000	Actual Amount Only if "Other" specified	Date (Mo., Day, Yr.) Only if Honoraria
S, DC or J — Ex-employer: Central Airforce Command				X					X											X								
S, DC or J — Ex-employer: Dow Jones & Smith, Hometown, USA			X													Low Partnership Income										$130,000	
S, DC or J — Ex-employer: Kemptstone Equity Fund													X							X								
S, DC or J — Ex-employer: Dow Jones & Smith pension plan													X															
1 — (Keogh Plan) SUN ENERGY PARTNERS, L.P.		X							X										X									
2 J — LUTHERAN BRTH. MONEY MKT.			X								X									X								
3 — NEUBERGER & BERMAN GUARDIAN FUND				X									X							X								
4 DC — NEUBERGER & BERMAN GUARDIAN FUND			X										X						X									
5 — PRINCETON UNIVERSITY PRINCETON, NJ																SALARY										$94,859.00		
6 S — HEIGHTSTOWN, NJ EAST WINDSOR REG. SCHOOL DIST.																SALARY												

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		8

Assets and Income (BLOCK A)	Valuation of Assets at close of reporting period (BLOCK B)								Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C)															
									Type								Amount									
Identify each asset held for the production of income which had a fair market value exceeding $1,000 at the close of the reporting period. Identify each asset or source of income which generated over $200 in income during the reporting period. None ☐	None (or less than $1,001)	$1,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $250,000	$250,001 - $500,000	$500,001 - $1,000,000	Over $1,000,000	Dividends	Rents and Royalties	Interest	Capital Gains	Exempted Investment Fund	Excepted Trust	Qualified Trust	Other (Specify Type)	None (or less than $201)	$201 - $1,000	$1,001 - $2,500	$2,501 - $5,000	$5,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $1,000,000	Over $1,000,000	Actual Amount Only if "Other" specified	Date (Mo., Day, Yr.) Only if Honoraria
S. DC Ex. empton J — Central Airlines Common			X						X										X							
S. DC Ex. empton J — Dos Jones & Smith, Hometown, USA			X													Ltd Partnership Income										$130,000
S. DC Ex. empton J — Kempstone Equity Fund								X					X							X						
S. DC Ex. empton J — Dos Jones & Smith pension plan								X					X												X	
1 THE MITRE CORP. MCLEAN, VA																TRUSTEE FEES									$68,085.	95
2 JASON * MCLEAN, VA															X	CONSULTING FEES										
3 J (Checking) UNITED JERSEY BANK PRINCETON, NJ			X								X							X								
4 J (Checking) HOME FED. SAVINGS LAJOLLA, CA		X									X							X								
5 SWARTHMORE COLLEGE SWARTHMORE, PA																CONSULTING FEES									$450	
6 LOS ALAMOS SCI. LAB. LOS ALAMOS, NM																CONSULTING FEES									$3,750	

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*/ Six-week summer session related to MITRE CORP.

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Reporting Individual's Name	SCHEDULE A	Page Number
WILLIAM HAPPER		9

Assets and Income (BLOCK A)	Valuation of Assets at close of reporting period (BLOCK B)								Income: type and amount. If "None (or less than $201)" is checked, no other entry is needed in Block C for that item. (BLOCK C)																					
									Type								Amount																
Identify each asset held for the production of income which had a fair market value exceeding $1,000 at the close of the reporting period. Identify each asset or source of income which generated over $200 in income during the reporting period. None ☐	None (or less than $1,001)	$1,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $250,000	$250,001 - $500,000	$500,001 - $1,000,000	Over $1,000,000	Dividends	Rent and Royalties	Interest	Capital Gains	Exempted Investment Fund	Exempted Trust	Qualified Trust	Other (Specify Type)	None (or less than $201)	$201 - $1,000	$1,001 - $2,500	$2,501 - $5,000	$5,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $1,000,000	Over $1,000,000	Actual Amount Only if "Other" specified	Date (Mo., Day, Yr.) Only if Honoraria
S, DC or J — Ex-amples: Central Airlines Common			X						X										X									
Ex-amples: Doe Jones & Smith, Hometown, USA			X													Law Partnership Income										$130,000	
Ex-amples: Kempstone Equity Fund								X					X							X								
Ex-amples: Doe Jones & Smith pension plan								X					X				X											
1 SMITH BARNEY NEW YORK, NY															X	CONSULTING FEES										$5,000	
2 AGUIRRE INTERNATIONAL SAN FRANCISCO, CA (consulting services through the University of California)															X	CONSULTING FEES										1,650	
3 R&D ASSOCIATES LOS ANGELES, CA															X	CONSULTING FEES										3,593.76	
4 SCHLUMBERGER - DOLL RESEARCH LABS RICHFIELD, CT															X	CONSULTING FEES										4,080	
5																												
6																												

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Reporting Individual's Name	SCHEDULE B	Page Number
WILLIAM HAPPER	New Entrant/Nominee/Candidate: Schedule Not Applicable [X]	10

Part I: Transactions

Report any purchase, sale, or exchange by you, your spouse, or dependent child during the reporting period of any real property, stocks, bonds, commodity futures, and other securities when the amount of the transaction exceeded $1,000. Include transactions that resulted in a loss. Do not report a transaction involving property used solely as your personal residence, or a transaction solely between you, your spouse, or dependent child. Check the "Certificate of divestiture" block to indicate sales made pursuant to a certificate of divestiture fom OGE.

None [ ]

S, DC or J	Identification of Assets	Transaction Type (x): Purchase	Sale	Exchange	Date (Mo., Day, Yr.)	Amount of Transaction (x): $1,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $250,000	$250,001 - $500,000	$500,001 - $1,000,000	over $1,000,000	Certificate of divestiture
Example	Central Airlines Common	x			2/1/91			x					
1													
2													
3													
4													
5													

Part II: Gifts, Reimbursements, and Travel Expenses

Report the source, a brief description (including travel, dates, and the nature of expenses provided), and the value of: (1) transportation, lodging, food, or entertainment received from one source totaling $250 or more (unless received as personal hospitality at the donor's personal or family residence); (2) other gifts from one source totaling $100 or more in value; and (3) cash reimbursements of $250 or more from one source. Exclude gifts, reimbursements and travel expenses from the U.S. Government, also exclude gifts from relatives, gifts of $75 or less when aggregating gifts for the total from one source, and gifts and reimbursements received by your spouse or dependent child that were given totally independent of the relationship to you. See instructions for further exclusions.

None [ ]

S, DC or J	Source (Name and Address)	Brief Description	Value
Examples	Nat'l Assn. of Rock Collectors, NY, NY	Airline ticket, hotel room & meals incident to national conference 6/15/90	$500
	Nat'l Assn. of Rock Collectors, NY, NY	Leather briefcase for retiring president	$125
1			
2			
3			
4			
5			

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Reporting Individual's Name	SCHEDULE C	Page Number
WILLIAM HAPPER		11

Part I: Liabilities

Report liabilities over $10,000 owed to any one creditor at any time during the reporting period by you, your spouse, or dependent child. Check the highest amount owed during the reporting period. Exclude a mortgage on your personal residence unless it is rented out; loans secured by automobiles, household furniture or appliances; and liabilities owed to certain relatives listed in instructions. See instructions for revolving charge accounts.

None [X]

	Creditors (Name and Address)	Type of Liability	Date Incurred	Interest Rate	Term if appli-cable	Category of Amount or Value (x)						
						$10,001 - $15,000	$15,001 - $50,000	$50,001 - $100,000	$100,001 - $250,000	$250,001 - $500,000	$500,001 - $1,000,000	Over $1,000,000
H, SP, DC or J	Examples: First District Bank, Washington, DC	Mortgage on rental property, Delaware	1981	13%	25 yrs.			x				
	John Jones, 123 J St., Washington, DC	Promissory note	1989	10%	on demand					x		
1												
2												
3												
4												
5												

Part II: Agreements or Arrangements

Report your agreements or arrangements for future employment, leaves of absence, continuation of payment by a former employer (including severance payments), or continuing participation in an employee benefit plan. See instructions regarding the reporting of negotiations for any of these arrangements or benefits.

None [ ]

	Status and Terms of any Agreement or Arrangement	Parties	Date
Example:	Pursuant to partnership agreement, will receive lump sum payment of capital account & partnership share calculated on service performed through 11/91 and retained pension benefits (independently managed, fully funded, defined contribution plan)	Doe Jones & Smith, Hometown, USA	7/85
1	I HOPE TO ARRANGE TO KEEP MY UNIVERSITY PENSION AND HEALTH PLAN.		
2	THERE HAVE BEEN NO ARRANGEMENTS MADE YET.		
3	Dr. Happer has agreed to resign from Princeton University. WH 5-24-91		
4			
5			
6			

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Reporting Individual's Name	SCHEDULE D	Page Number
WILLIAM HAPPER		12

Part I: Positions Held Outside U.S. Government

Report any positions held during the applicable reporting period, whether compensated or not. Positions include but are not limited to those of an officer, director, trustee, general partner, proprietor, representative, employee, or consultant of any corporation, firm, partnership, or other business enterprise or any non-profit organization or educational institution. Exclude positions with religious, social, fraternal, or political entities and those solely of an honorary nature.

None ☐

	Organization (Name and Address)	Type of Organization	Position Held	From (Mo., Yr.)	To (Mo., Yr.)
Examples:	Nat'l Assn. of Rock Collectors, NY, NY Doe Jones & Smith, Hometown, USA	Non-profit education Law firm	President Partner	6/82 2/85	Present 11/91
1	THE MITRE CORPORATION MCLEAN, VA	FEDERALLY FUNDED RESEARCH & DEVELOPMENT CENTER	TRUSTEE	1/88	PRESENT
2	JASON MCLEAN, VA	SCIENTIFIC ADVICE	CHAIRMAN	6/87	6/90
3	LOS ALAMOS NATIONAL LAB LOS ALAMOS, NM (operated by the University of California) 5-24-91	GOVERNMENT-OWNED CONTRACTOR-OPERATED FACILITY	CONSULTANT	6/86	PRESENT
4	SCHLUMBERGER-DOLL, RICHFIELD, CT	WELL LOGGING	CONSULTANT	1/90	PRESENT
5	AGUIRRE INTERNATIONAL SAN FRANCISCO, CA	SCIENTIFIC CONSULTING FOR LLNL (University of California) 5-24-91	CONSULTANT	6/86	PRESENT
6	SMITH BARNEY, NEW YORK, NY	FINANCIAL	CONSULTANT	3/29/90	3/31/90

Part II: Compensation In Excess Of $5,000 Paid by One Source

Report sources of more than $5,000 compensation received by you or your business affiliation for services provided directly by you during the reporting period. This includes the names of clients and customers of any corporation, firm, partnership, or other business enterprise, or any non-profit organization when you directly provided the services generating a fee or payment of more than $5,000. You need not report the U.S. Government as a source.

Incumbent/ Termination Filer/ Candidate: Not Applicable ☐

None ☐

	Source (Name and Address)	Brief Description of Duties
Examples:	Doe Jones & Smith, Hometown, USA Metro University (client of Doe Jones & Smith), Mountown, USA	Legal services Legal services in connection with university construction
1	THE MITRE CORPORATION, MCLEAN, VA	CONSULTATION ON COMPANY SCIENTIFIC AND TECHNICAL ISSUES AS PART OF MY DUTIES AS A TRUSTEE
2	JASON, MCLEAN, VA	SCIENTIFIC AND TECHNICAL STUDIES OF DEFENSE AND ENERGY ISSUES
3	PRINCETON UNIVERSITY, PRINCETON, NJ	PROFESSOR, CONDUCTED RESEARCH, AND DIRECTED RESEARCH OF STUDENTS AND ASSISTANT PROFESSORS
4		
5		
6		

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Reporting Individual's Name	SCHEDULE D	Page Number
WILLIAM HAPPER		13

Part I: Positions Held Outside U.S. Government

Report any positions held during the applicable reporting period, whether compensated or not. Positions include but are not limited to those of an officer, director, trustee, general partner, proprietor, representative, employee, or consultant of any corporation, firm, partnership, or other business enterprise or any non-profit organization or educational institution. Exclude positions with religious, social, fraternal, or political entities and those solely of an honorary nature.

None ☐

	Organization (Name and Address)	Type of Organization	Position Held	From (Mo., Yr.)	To (Mo., Yr.)
Examples	Nat'l Assn. of Rock Collectors, NY, NY	Non-profit education	President	6/82	Present
	Doe Jones & Smith, Hometown, USA	Law firm	Partner	'86	1/91
1	PRINCETON UNIVERSITY, PRINCETON, NJ	EDUCATION	PROFESSOR	8/80	PRESENT
2	SWARTHMORE COLLEGE, SWARTHMORE, PA	EDUCATION	CONSULTANT	2/90	2/90
3	R&D ASSOCIATES, LOS ANGELES, CA	CONSULTANT	CONSULTANT	2/90	3/90
4					
5					
6					

Part II: Compensation In Excess Of $5,000 Paid by One Source

Report sources of more than $5,000 compensation received by you or your business affiliation for services provided directly by you during the reporting period. This includes the names of clients and customers of any corporation, firm, partnership, or other business enterprise, or any non-profit organization when you directly provided the services generating a fee or payment of more than $5,000. You need not report the U.S. Government as a source.

Incumbent/ Termination Filer/ Candidate: Not Applicable ☐

None ☐

	Source (Name and Address)	Brief Description of Duties
Examples	Doe Jones & Smith, Hometown, USA	Legal services
	Metro University (client of Doe Jones & Smith), Manytown, USA	Legal services in connection with university construction
1		
2		
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Executive Level Position Statement

Position Title: Director, Office of Energy Research

Grade: EL-IV - Presidential Appointee

The Director, Office of Energy Research (ER), is responsible for carrying out a broad range of advisory, coordination and program management activities related to the Department's energy research and development missions. The Office of Energy Research responsibilities range across a broad spectrum, including research in the basic energy sciences, high energy and nuclear physics, magnetic fusion energy, and biomedical and environmental sciences; other activities related to the Department's energy R&D programs; special university research and manpower development efforts; and oversight of the management of DOE's nonweapons multiprogram laboratories.

The Director of Energy Research advises the Secretary on science and technology policy; the well-being and management of nonweapons multiprogram laboratories; in formulating the basic research policy of the Department; and on grants and other forms of financial assistance required for effective short-and long-term basic and applied research activities of the Department. The Director provides independent review, analysis and recommendations to the Secretary concerning R&D strategies, plans, policy and technology programs.

Provides a permanent secretariat for the Energy Research Advisory Board (ERAB) which advises the Secretary on developmental and research opportunities. Manages and supports the Enrico Fermi and E.O. Lawrence Awards process for the Department.

Responsible for ER planning, budgeting, procurement and management systems as well as construction, environment and safety, safeguards and security, emergency preparedness, and quality assurance. Represents the Secretary on budget and policy matters relating to energy research before OMB, Congress and the public.

Serves as the principal point of contact in DOE for research policy planning relevant to National energy issues. Represents DOE in Federal R&D coordination activities, including the President's Federal Coordinating Council on Science, Engineering and Technology (FCCSET). Coordinates DOE involvement in interagency cross-cutting science and technology areas such as climate, health and ocean science. Serves as DOE coordinator for energy-related inputs to the President's Annual S&T Report. Provides leadership in Federal energy R&D, as directed by the Secretary, in such areas as developing approaches to systematic technology transfer planning.

Administers the Department's Small Business Innovation Research (SBIR) program mandated by the Small Business Innovation Development Act (Public Law 97-219) which was enacted July 22, 1982, to strengthen the role of small, innovative firms in federally funded research and development.

Testifies at Congressional hearings on Presidential budget requests and for defending the associated programmatic direction before the authorization, appropriation and oversight committees of both houses of the United States Congress.

Defends DOE proposed programs to the Executive Office of the President - Office of Management and Budget as part of the President's budget development process.

Reports to the Secretary who provides very broad policy guidance.

Department of Energy
Washington, DC 20585

JUL 15 1991

The Honorable J. Bennett Johnston
Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Please be advised that, pursuant to section 101(b) of the Ethics in Government Act of 1978, as amended, I have informed the appropriate ethics officials that the information required by section 102(a)(1)(A) of the Act with respect to income and honoraria contained in the Standard Form 278 (Executive Branch Public Financial Disclosure Report) executed by me on March 12, 1991, is current as of July 15, 1991, except that since the date of the report, I have received:

(1) $10,981.44 in salary from Princeton University, Princeton, New Jersey, in addition to the amount reported on page 7, line 5 of the report;

(2) $5,500.00 in trustee fees from The MITRE Corp., McLean, Virginia, in addition to the amount reported on page 8, line 1 of the report;

(3) $4,939.69 in consulting fees from JASON, McLean, Virginia, in addition to the amount reported on page 8, line 2 of the report;

(4) $2,734.95 in consulting fees from Los Alamos National Laboratory, Los Alamos, New Mexico, in addition to the amount reported on page 8, line 6 of the report; and

(5) $1,568.14 in consulting fees from Lawrence Livermore National Laboratory, Livermore, California.

The amounts from Lawrence Livermore and Los Alamos National Laboratories include payments for expenses of travel and lodging.

This date is within five days prior to the date of the first hearing scheduled to consider my nomination.

Sincerely,

William Happer

William Happer

District of Columbia ss

Subscribed and sworn to before me this 15th day of July, 1991.

Notary Public
My Commission Expires November 14, 1994

cc: The Honorable Malcolm Wallop
Ranking Minority Member

Mr. Stephen D. Potts
Director, Office of Government Ethics

Ralph D. Goldenberg
Assistant General Counsel for General Law

Biographical Information
DR. WILLIAM HAPPER
Professor of Physics
Princeton University

May, 1991

Dr. William Happer, a Professor in the Department of Physics at Princeton University, is a specialist in modern optics, optical and radiofrequency spectroscopy of atoms and molecules, and spin-polarized atoms and nuclei.

Born July 27, 1939 in Vellore, India, Dr. Happer's parents were Lt. Col. William Happer, a Scottish physician in the Indian Army, and Dr. Gladys Morgan Happer, an American medical missionary. He received a B.S. degree in Physics from the University of North Carolina in 1960 and the PhD degree in Physics from Princeton University in 1964. While at the University of North Carolina he held a Morehead Scholarship and a National Merit Scholarship, and he held a National Science Foundation Fellowship, a Woodrow Wilson Fellowship, and a Queen Fellowship during his graduate education at Princeton University.

In 1964 he went to Columbia University to take a position as Research Associate in the Columbia Radiation Laboratory. During his stay at Columbia he served as Instructor, Assistant Professor and Professor in the Department of Physics. He also served as Co-Director of the Columbia Radiation Laboratory from 1971 to 1976 and as Director from 1976 to 1979. In 1980 he joined the faculty at Princeton University. He was awarded the Class of 1909 Professorship of Physics at Princeton in 1988.

He has maintained an interest in applied physics as well as basic physics, and he has served as a scientific consultant to numerous firms and government agencies. From 1987 to 1990 he served as Chairman of the Steering Committee of JASON, a group of mostly academic scientists and engineers who advise agencies of the Federal Government on matters of defense, intelligence, energy policy and other technical problems. He is a trustee of the MITRE Corporation.

He has published over 100 scientific papers in *The Physical Review, The Physical Review Letters, The Reviews of Modern Physics,* and other journals. He is a Fellow of the American Physical Society and the American Association for the Advancement of Science. He held an Alfred P. Sloan Fellowship from 1966 until 1970, and in 1976 he spent six months at the Max Planck Institute for Laser Research in Garching, Germany with the aid of an Alexander von Humboldt Award.

Dr. Happer was married in 1967 to the former Barbara Jean Baker of Rahway, New Jersey. They have two children, James William, born June 11, 1968, and Gladys Anne, born May 6, 1971. The Happers live at 559 Riverside Drive in Princeton, New Jersey.

CURRICULUM VITAE

Personal

December, 1990

William Happer
559 Riverside Drive
Princeton, N.J. 08540

Business Telephone: 609 258 5584
Home Telephone: 609 921 1487

Born July 27, 1939, Vellore, India.
United States Citizen.

Education

B.S. in Physics, University of North Carolina, 1960.
Ph.D. in Physics, Princeton University, 1964.

Professional History

September, 1964 to June, 1965, Research Physicist, Columbia Radiation Laboratory, Columbia University.

July, 1965 to June, 1966, Instructor in Physics, Columbia University.

July, 1966 to June, 1970, Assistant Professor of Physics, Columbia University.

July, 1970 to June, 1974, Associate Professor of Physics, Columbia University.

July, 1971 to June, 1976, Co-Director, Columbia Radiation Laboratory, Columbia University.

July, 1976 to January, 1979, Director, Columbia Radiation Laboratory, Columbia University.

July, 1974 to August 1980, Professor of Physics, Columbia University.

September, 1980 to present, Professor of Physics, Princeton University.

June 1975 to present, Member of JASON.

January, 1982 to December, 1986, Vice Chairman, JASON.

January, 1987 to 1990, Chairman, JASON.

Special Grants, Awards and Appointments

National Merit Scholarship, 1956-1960.
Morehead Scholarship, 1956-1960.
Woodrow Wilson Fellow, 1960-1964.
National Science Foundation Fellowship, 1960-1962.
Queen Fellowship, 1963-1964.
Alfred P. Sloan Research Fellow, 1967-1970.
Fellow, American Physical Society.
Fellow, American Association for the Advancement of Science.

Alexander von Humboldt Award, 1976.
Class of 1909 Professor of Physics at Princeton University, 1988 to present.

Consultant to:

Schlumberger
Johns Hopkins Applied Physics Laboratory
NASA
RCA Space Division
Los Alamos National Laboratory
Bendix
Army Basic Science Advisory Board
Advisor to White House Science Council
Science Advisory Board of the Strategic Defense Initiative
Trustee of the MITRE Corporation
Singer-Kearfott
Litton Industries
Naval Air Development Center
Lawrence Livermore National Laboratory
Argonne National Laboratory
Air Force Science Advisory Board
James D. Wolfensohn, Investment Bankers

Princeton University Department of Physics

PUBLICATIONS OF WILLIAM HAPPER, JR.

Observations of Transitions Between Stationary States in a Rotating Magnetic Field, Phys. Rev. 136A, 35 (1964).

(with E. A. Phillisp and J. D. McCullen) Spin, Hyperfine Structure, and New Magnetic Moment of 21-min. Mn^{52m}, Phys. Rev. 140A, 555 (1965).

(with E. B. Saloman) Observation of Different Lifetimes for Atomic States Excited with Linearly and Circularly Polarized Light, Phys. Rev. Lett. 15, 441 (1965).

(with R. G. Cornwell and J. D. McCullen) Nuclear Moments of Sc^{43} and Sc^{47}, Phys. Rev. 141, 1106 (1966).

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APPENDIX II

Responses To Additional Questions

DEPARTMENT OF ENERGY,
OFFICE OF ENERGY RESEARCH,
Washington, DC, July 23, 1991.

Hon. J. BENNETT JOHNSTON,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Thank you for the opportunity to appear before you and the distinguished members of your Committee on July 18, 1991, for my confirmation hearing for the position of Director, Office of Energy Research.

Enclosed for the record are answers to questions submitted to me in writing. In compliance with your request, included are copies for distribution to the members of the Committee.

Please let me know if I can be of further service.

Sincerely,

WILLIAM HAPPER,
Director-Designate.

[Enclosure.]

QUESTIONS FROM SENATOR JOHNSTON

Question 1. Have you ever been investigated, arrested, charged or held by any Federal, State, county or municipal law enforcement authority for violation of any Federal, State, county or municipal law, regulation or ordinance, other than a minor traffic offense. If so, please explain.

Answer. No.

Question 2. Have you ever been convicted (including a plea of guilty or nolo contendre) of any criminal violation other than a minor traffic offense?

Answer. No.

Question 3. Have you ever been disciplined or cited for a breach of ethics for unprofessional conduct by, or been the subject of a complaint to any court, administrative agency, professional association, disciplinary committee, or other professional group? If so, provide details.

Answer. No.

Question 4. Have you or your spouse ever represented in any capacity (e.g., employee, attorney, business, or political adviser or consultant), with or without compensation, a foreign government or an entity controlled by a foreign government? If so, please fully describe such relationship.

Answer. No.

Question 5. If you or your spouse have ever been formally associated with a law, accounting, public relations firm or other service organization, have any of your or your spouses's associates represented, in any capacity, with or without compensation, a foreign government or an entity controlled by a foreign government? If so, please fully describe such relationship.

Answer. No.

Question 6. During the past ten years, have you or your spouse received any compensation from, or been involved in any financial or business transactions with, a foreign government or an entity controlled by a foreign government? If so, please furnish details.

Answer. No.

Question 7. Have you or your spouse ever registered under the Foreign Agents Registration Act? If so, please furnish details.

Answer. No.

Question 8. Were all of your taxes (Federal, State, and local) current (filed and paid) as of the date of your nomination hearing? If not, please explain.

Answer. Yes.

Question 9. Have all of your Federal, State and local taxes always been paid on time? If not, please explain.

Answer. Yes.

Question 10. If confirmed, are there any known limitations on your willingness or ability to serve for your full term or until the next Presidential election, whichever is applicable?

Answer. No.

Question 11. Please advise the committee of any additional information, favorable or unfavorable, which you think the Committee would want to be aware of in considering your nomination.

Answer. I know of no additional information.

Question 12. To improve efficiency and conserve resources the Department of Defense is consolidating facilities. Do you think DOE should consider such an action in its Office of Energy Research Facilities?

Answer. I believe the Office of Energy Research has procedures in place to review the status of their facilities. Both program and laboratory management must review the ER laboratories annually as part of their budgeting and long-range planning activities. In addition, individual ER programs have review boards such as the High Energy Physics Advisory Panel and the Nuclear Science Advisory Committee, which evaluate their scientific program facilities against their current and projected programmatic requirements and recommend which older facilities should be shut down to accommodate new, cutting-edge facilities. If confirmed, I intend to review the facilities supported by ER to determine whether savings can be made, without serious damage to program goals, by consolidation of facilities.

Question 13. There are 5 high energy physics projects and 2 magnetic fusion energy projects being considered by the department. It is highly unlikely the country can afford all these projects. How do you intend to deal with this issue? How will you prioritize the projects?

Answer. I take very seriously the Administration's commitment to deficit reduction. If confirmed, I am personally committed to manage programs in the Office of Energy Research within the constraints we face. ER will only be able to fund the highest-priority projects. I will use the most statesmanlike scientific advice I can obtain to set priorities for ER facilities. I also believe that with careful attention to project management and potential financial contributions from non-Federal sources, where appropriate, the need for Federal funds might be somewhat reduced.

Question 14. It is my understanding that you do not support engineering projects, but rather are a supporter of science. It is my further understanding that the major science projects planned by the Department entail a great deal of complex engineering. Would you comment on the apparent discrepancies.

Answer. The Office of Energy Research does support engineering research in fields such as robotics, multi-phase fluid flow, and chemical dynamics. In addition, instruments to pursue the frontiers of science usually require the best contemporary engineering available. This was true of the telescopes, flying machines, electrostatic generators, and "wireless" devices of the past, and it is true for scientific facilities today. If confirmed, I will ensure that ER supports sufficient engineering R&D to reliably achieve DOE missions and technical goals.

Question 15. Do you view magnetic fusion energy as a science program or an energy program? Do you believe fusion will play a role in our nation's energy future? If so, how and when? What is your opinion of the Burning Plasma Experiment (BPX) and the International Thermonuclear Engineering Reactor (ITER)?

Answer. The magnetic confinement fusion program of the Department of Energy aims to provide an environmentally acceptable energy option for the U.S. with practically unlimited fuel supplies. Magnetically confined thermonuclear plasmas are not known to exist anywhere in the universe. They are a creation of man, and the magnetic fusion program must therefore contain a great deal of basic science as well as innovative engineering, since nature has not done the experiment for us. I believe that magnetic fusion will play a role in our energy future sometime near the middle of the next century. The first applications could be the use of heat from thermonuclear plasmas to produce electrical power or the use of the neutrons from such plasmas to breed fuel for fission reactors. Both BPX and ITER would advance our understanding of magnetic confinement fusion. BPX is more narrowly focused on scientific goals, while some conceptions of ITER have a large engineering component. If confirmed, I would work with the fusion community, both in the United

States and abroad, to select the most incisive, expeditious and affordable way to master the scientific and engineering problems of magnetic fusion.

Question 16. What role do you believe industry should play in magnetic fusion energy?

Answer. Industry has always had a prominent role in fusion research, as a supplier of massive power supplies, magnets, vacuum vessels, and other hardware, and also as the source of good ideas. Both ITER and BPX would require substantial industrial participation. Should magnetic confinement fusion prove to be an attractive option for providing energy, as I think likely, industry will have to take the lead in commercialization.

Questions From Senator Wendell H. Ford

Question 1. As you well know, there is always a limited amount of funding for the science projects within the Office of Energy Research. I have been concerned for a long time about the tradeoffs made in funding big science versus small science. As federal budgets get tighter, it becomes more and more important to establish some priorities for these science projects. There simply will not be enough money for everything.

a. Shouldn't we be setting priorities at the Department for research funding?

b. Do you have an opinion on what should be the highest priority for the Office of Energy Research?

c. Is it possible to prepare a list of priorities within the Office of Energy Research?

Answer 1a. In effect, the development of all budgets reflects the setting of priorities. It is a very difficult task to set priorities among diverse programs, but our challenge will be to set these priorities with the best possible outside advice that we can get.

b. Among the criteria I would set for high priority research are:

(1) the potential for contributions to the energy security, health, environmental well-being, and economic competitiveness of the United States;

(2) the potential for creation of new scientific knowledge; and

(3) the potential for scientific education.

c. The Department's budget requests will, in effect, present the priorities of the Office of Energy Research. If I am confirmed, I will of course play a major role in the setting of those priorities.

Question 2. I am particularly concerned about the escalating budget estimates for the Superconducting Super Collider. Certainly, the questions that will be answered by the SSC are very important. And I know that the Chairman of this Committee is a strong supporter of the SSC. But I am concerned again about the tradeoffs that will have to be made to fund the SSC. New money is simply not available in the current budget environment. Everything we do now is "pay as you go."

a. Are you concerned that we will nickel-and-dime other science projects in order to pay for the SSC?

b. How do we avoid that?

Answer 2a. I would certainly be concerned if we were to nickel-and-dime other science projects to pay for the SSC.

b. The President's FY 1992 budget request for science activities includes the requisite funding for the SSC along with significant initiatives in many other areas of science. A team with excellent credentials has been put in place to manage the SSC as a design-to-cost project.

Question 3. Members of this Committee have a key interest in the work of the Department's national laboratories. The laboratories are doing some very important work in energy research. I believe that the laboratories could probably be doing more in the area of applied research and technology development.

a. Do you agree with that?

b. What can we do to move the laboratories more in that direction?

c. What do you think is the proper role of the laboratories in working with the universities and industry in the areas of applied research and technology development?

Answer 3a. Technology from the DOE laboratories has formed the basis for new industries, including nuclear imaging, the use of radioisotopes for nuclear medicine, nuclear power, and supercomputing technology. I agree that the laboratories can do more in the future.

b. The Secretary has called on the laboratories to increase their interactions with the private sector and to form collaborative relationships with industry and the universities. I believe this effort will be very important in effectively using laboratory capabilities in support of applied R&D.

c. The laboratories have very strong capabilities in applying multi-disciplinary and inter-disciplinary scientific expertise to research problems, coupled with a network of user facilities of growing importance tc industry in areas of applied research. The laboratories are expanding the availability of these resources to industry and universities, and are pursuing increased collaborative work. In addition, the laboratories are responding to the Department's new emphasis on technology transfer, and have been working to increase their activities in this area. Licenses of DOE technologies have steadily increased over the last few years, as has licensing income. Industrial users of DOE facilities have also increased. Also, under the authorities granted in the National Competitiveness Technology Transfer Act (NCTTA), the laboratories are entering into Cooperative Research and Development Agreements (CRADA's). All of the major R&D laboratories have CRADA's underway or under negotiation.

Question 4. I understand that Secretary Watkins has recently announced that the Director of Energy Research will also serve as the Science and Technology Advisor to the Secretary.

a. What will you do in the role of Science and Technology Advisor?

b. How will these two positions interact?

Answer 4a. The Science and Technology Advisor (STA) will provide the Secretary with advice on a number of important issues, such as external scientific and technical developments relevant to the missions and activities of DOE; opportunities to apply DOE-developed science and technology within the DOE infrastructure; productive areas for cooperation among the science and technology programs funded by individual elements of the DOE; the balance and effectiveness of DOE support and utilization of researchers in universities, industry and the DOE laboratories; ways to improve and maintain productive relationships among DOE laboratories, universities and industry; and the scientific and technical aspects of institutional processes for strategic plans, multi-year plans and budget proposals. The STA will also provide a high-level focus of concern in DOE Headquarters for the overall vitality of the DOE National Laboratories, both as individual institutions and as a collective intellectual resource for the nation. The STA will provide overall departmental coordination of crosscutting science and technology issues such as implementation of technology transfer, education, and small business innovative research. The STA will ensure that departmental and national priorities are accurately reflected in the content of these programs.

b. While the Director of Energy Research also functions as the STA, the Office of the STA will be distinct from the research programs of the Office of Energy Research and will have a reporting chain to the STA that is separate from that of the ER research programs.

Questions From Senator Steven D. Symms

Question 1. Despite qualms by administration officials, will there be a sincere funding profile completed as directed by the Senate Appropriation Committee's report language to provide the basis of a continuing, multi-year budgetary commitment to both BNCT research and PBF modification? Can such a funding profile be prepared in time to meet the August 30, 1991, deadline?

Answer. I understand the Department is actively pursuing the development of a continuing, multi-year budget both for carrying out a BNCT research program and for modification of the Power Burst Facility Reactor for the period fiscal years 1992-1995 as directed by the Senate Appropriations Committee. I understand the Department fully expects the report will be submitted to the Senate by the August 30, 1991 deadline.

Question 2. Are there concerns you have, that the Senate may not be aware of, causing you to oppose the Congressional action to authorize and appropriate dollars to modify PBF?

Answer. In the limited time available to me I have tried to learn about the issues for BNCT and the PBF. I understand that research, involving participants from INEL and elsewhere, is underway to determine whether enough boron can be concentrated in tumors to allow the tumors to be destroyed by epithermal neutrons, like those produced by a modified PBF, with tolerable collateral damage to the skin and surrounding healthy tissue. If confirmed, I will look into the PBF modification issue with an open mind.

Question 3. Would you recommend against such a move by Congress? If so, why?

Answer. Boron Neutron Capture Therapy appears to be a promising method of radiation treatment and the Department is supporting research in a number of important areas. With respect to the possible modification of PBF, the Department has

received independent scientific advice recommending against conversion of the reactor. If confirmed I will look into the PBF modification issue with an open mind.

Question 4. Has progress been made in the research program in the areas of boron compound development, boron pharmacology, radiobiology of boron neutron interactions, and dosimetry of neutron capture reactions? If so, is the progress sufficient for you to recommend that the Power Burst Facility be modified for human trials of this treatment?

Answer. I understand that progress has been made during the last several years in the areas mentioned. I have not yet had an opportunity to review this issue in depth and, therefore, I am not prepared to comment at this time.

QUESTION FROM SENATOR MARK O. HATFIELD

Question 1. Could you state, Dr. Happer, your views on the increased roles that universities can play in the Department of Energy's Research and Development programs? The Administration's new science initiatives—for example, High Performance Computing Initiative as well as the Human Genome and Environmental Restoration programs--seem to present good opportunities for enhanced university participation in DOE's research programs. Please comment.

Answer. In my view, one of the unique strengths of the U.S. research enterprise is the historic partnership between the Federal Government and the nation's universities and colleges. I have seen this partnership at first hand during my years at Princeton University and at Columbia University. There are two key components of university-based research that are essential to the national research goals. One is the creation of new scientific knowledge which can be applied over time to the development of new technologies and products. The other, which is equally important is the education of the next generations of scientists and engineers through participation in advanced research. The Department of Energy is clearly a major sponsor of university research in all areas of energy R&D, as well as in many areas of fundamental science. If confirmed, I will look closely at the current support provided by all Department programs for university research and related manpower development. University scientists and students should be closely involved in all Department R&D programs, including the two initiatives you cited in your question. I also will be interested in how we can develop even closer collaboration in research between university, industrial and national laboratory researchers. It seems to me that such cooperation is essential if we are to succeed in meeting the many challenging R&D needs which face the Department.

Question 2. The Pacific Northwest Laboratory has been developing a new scientific initiative called, the Environmental and Molecular Sciences Laboratory. PNL has actively engaged the research community of the Pacific Northwest in the development of its programs. Can you describe the position of the Office of Energy Research on the relationships between the university community and the Pacific Northwest Laboratory regarding this new scientific initiative?

Answer. The Environmental and Molecular Sciences Laboratory (EMSL) is a project which is budgeted and managed by DOE's Office of Environmental Restoration and Waste Management (EM). A recently signed Memorandum of Agreement (MOA) between EM and the Office of Energy Research (ER) spells out how the two offices will work together to ensure the successful completion of the project and its evolving research programs. According to the MOA, ER will fund the basic research and EM will fund the technology oriented research. A research program which involves strong collaborations with universities in the Pacific Northwest and nationwide is envisioned by the MOA.

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